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ABSTRACT

This paper presents findings of a study that examined how principals' instructional management behaviors are conditioned by contextual factors such as principals' personal characteristics, school district conditions, and other external factors. The study used the instructional leadership model advocated by S. T. Bassart, D. C. Dwyer, R. Rowan and G. V. Lee (1982) to analyze the national database available from the Schools and Staffing Surveys (SASS) established by the National Center for Education Statistics (NCES). Findings suggest that a number of contextual factors significantly influenced principals' effectiveness in instructional management. Overall, factors such as gender, age, education, work experience, school size, urbanicity, and percentage of minority enrollment were tested as significantly related to principals' perceived effectiveness in instructional leadership, either positively or negatively. Some factors that were previously assumed to be important factors were found to be insignificant. For example, principals' training, their academic major in education administration, their school's cultural diversity, and affluence level of students' families did not seem to affect principals' instructional management behaviors. Thirteen tables and one figure are included. (Contains 38 references.) (LMI)

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SCHOOL CONTEXTS, PRINCIPAL CHARACTERISTICS, AND INSTRUCTIONAL LEADERSHIP EFFECTIVENESS: A STATISTICAL ANALYSIS

Paper Presented at the
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Executive Summary

Using the instructional leadership model advocated by Bossert, Dwyer, Rowan and Lee (1982) of the Far West Laboratory for Educational Research and Development, this study is an attempt to study how principals' instructional management behaviros are conditioned by contextual factors such as principals' personal characteristics, school district conditions, or other external factors. This study is believed to be the first attempt to use a large-scale national database established by the National Center for Education Statistics (NCES) to study school adminstration issues such as principals' instructional leadership effectiveness.

Findings from the statistical analysis of main effects suggest that a number of contextual factors does have significant influence on principals' effectiveness in instructional management. Overall, factors such as gender, age, education, work experience, school size, unbanicity, and percentage of minority enrollment are tested as significantly related to principals' perceived effectiveness in instructional leadership, either positively or negatively. Some factors that were previously assumed to be important factors are proved to be insignificant. For example, principals' trainings, their academic major in education administration, school's cultural diversity, and affluence level of students' families do not seem to affect principals' instructional management behaviors.

School Contexts, Principal Characteristics, and Instructional Leadership Effectiveness: A Statistical Analysis[1]

I. Introduction

During the past twenty years, principals' role as instructional leaders has received considerable attention from the education research community. As early as in 1980, it was declared that "principal-as-instructional-leader has become a buzz term and a bandwagon concept[2]." As discussions on principals' instructional leadership role expand, the debates appear to grow to include not only the definition of principals' role as instructional leaders and ways to improve the effectiveness of instructional leadership, but also the examination of the contextual factors that might influence principals' instructional management behaviors and the relationship between instructional leadership and school outcomes (Hallinger & Murphy, 1986a; Lee, 1990; Klein-Kracht, 1993).

The heightened attention given to the instructional leadership role of principals is not without its political and social impetus. Repeated calls to reform and to restructure America's educational system emphasized the need for changing things at the local and building level, with principals' leadership role being highlighted (Clinton, 1986; Carnegie Forum on Education and the Economy, 1986; Holmes Group, 1986). It is widely recognized that school improvements cannot be achieved without the support and participation of principals (Kirst, 1990). Principals' contributions to school improvements are believed to be multiple dimensional to include: moral, instructional, managerial, cultural, and strategic leadership (Leithwood & Duke, 1993).

Researchers of effective schools believe that every school can be effective and effective schools usually have effective leaders. One of the key leadership roles principals must fulfill is the role of instructional leaders. In a study sponsored by the Far

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The author would like to thank Chuck Hammer, Sharon Bobbitt, Dan Kasprzyk, Kerry Gruber, Edith McArthur and Steve Kaufman of NCES, Bill Russell and Jeanie Murdock of the AERA for their helpful comments and assistance.

[2] "Effective Instructional Leadership", The Best of ERIC on Educational Management, ERIC Report Number 67, January 1983.

West Laboratory (FWL) for Educational Research and Development, Bossert, Dwyer, Rowan, and Lee (1982) proposed a comprehensive model of instructional leadership. In this model (better known as the FWL Model), Bossert, Dwyer, Rowan, and Lee (1982) argue that principals can influence student learning through their manipulation of **instructional management factors** such as amount of time students spent on learning tasks, class size or curriculum organization and through **school climate factors** such as expectations for students, parental involvement, and school order/safety. They also recognize that principals' influences are constrained by a number of **environmental factors**, such as the characteristics of the school district, the external social conditions of the school, and the personal characteristics of the principals themselves.

The FWL Model establishes a theoretical framework for exploring principals' instructional management behaviors and was widely accepted by researchers of education administration. Many studies have since been conducted to apply this model in empirical settings to test and to fine-tune the theory. Among these studies, a number of them was primarily concerned with the contextual factors that might influence principals' instructional leadership behaviors. For example, Heck and Marcoulides' (1990) study investigated the impacts of school level and school size on principals' instructional leadership effectiveness; Hallinger and Murphy's (1985) research focused on gender, age, and the socio-economic conditions of schools; and Hannaway and Talbert's (1993) analysis surveyed the urban and suburban differences in instructional management.

These studies corrected what Hallinger and Murphy (1986, 1987) called the uni-directional view of instructional leadership. Such a view attributed principals' impact on student learning to leadership behaviors without considering the nature of the school context and its influence on school leaders. This uni-directional view was reflected in many cookbook-like programs for training principals in which many aspiring school administrators were led to believe that if they do all the steps prescribed, they would become effective instructional leaders. As Bossert, Dwyer, Rowan and Lee (1982) pointed out, such a view distorted reality. In practice, no single approach in instructional management can be universally effective. Principals must learn to adjust their knowledge of administrative theory to local and school conditions. As many of these studies on

contextual factors indicate, principals' approaches to instructional leadership are contingent upon the unique situations of their schools.

Studies on the relationship between principals' leadership behaviors and school contexts were usually based on data collected through questionnaire surveys and personal interviews. The small number of cases available usually confined them to focus on a narrow range of factors. Such limitations restrict both the completeness and the generalizability of their findings. In this study, I would like to address these limitations by offering a comprehensive analysis of a wide range of contextual variables based on a nationwide study of school principals. The primary objective of this study is to use statistical evidence to compile a comprehensive profile on how contextual factors are associated with principals' instructional leadership behaviors. In the following chapters, I would like to offer a brief discussion on how instructional leadership as a theoretical construct can be defined and what are the key factors that may influence the variations in instructional leadership effectiveness. Then, national survey data used in this study and the data analysis methods employed are explained. Finally, research findings and policy implications based on statistical inferences are offered.

II. Theories of Instructional Leadership

Traditional definition of instructional leadership emphasized principal's role as a "Master Teacher", that is, principals as instruction and curriculum experts. Principals in the master teacher mode usually work closely with teachers, make frequent visits to classrooms and provide detailed suggestions for improving teaching skills (Danley & Burch, 1978). Such a view abridges the complex construct of instructional leadership to an one-dimensional concept of instructional supervision. As Lee (1990) points out, this image of instructional leadership is actually what most educators conceptualize and experience it practically. Lee believes that in most schools, instructional supervision and classroom visitation are synonymous in the minds of teachers and administrators. This view of instructional leadership can be quite problematic in implementation. If a principal is serious about performing this role, he/she is likely to feel overwhelmed by the

time and energy needed to conduct multiple sessions of classroom observations in order to give teachers on-site evaluations and feedbacks.

Recognizing the problem with this narrow definition, most of the recent studies on instructional leadership have more realistic and broader definitions for principals' role as instructional leaders. Pajak and McAfee (1992) argue that principals should be curriculum generalists instead of specialists. They should have broad knowledge on the scope and sequence of the curriculum as well as curriculum design and development. But they should not get deeply involved with the detailed work of instructional design and development, especially in large-size urban schools. As school leaders, principals can exercise their instructional leadership through making decisions concerning routine activities such as staffing, teacher training, scheduling, and selection of teaching materials. Even traditional managerial tasks such as keeping an orderly environment within the school can be considered as part of the responsibilities for instructional leaders.

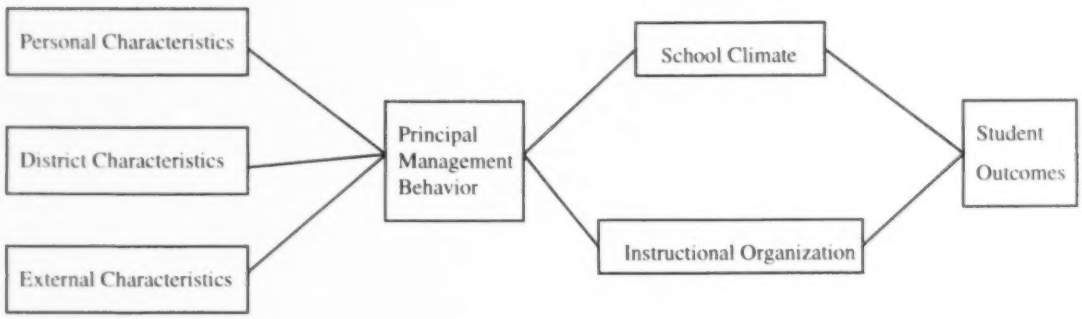
The broadening of the scope for redefining instructional leadership is based on a more realistic assessment of what principals can do to achieve effective outcomes for improving the instructional programs of their schools. Principals are not "Superman". They cannot be all things to all people. Moreover, most teachers do not always readily accept principals as hands-on or face-to-face instructional leaders (Wooster, 1985; Kleine-Kracht, 1993). Principals can achieve effective instructional leadership through indirect means. For example, principals can delegate some of their responsibilities to other people, such as department heads and curriculum specialists. As Lee (1990) points out, principals should develop strategies to work with and empower their staffs collectively so that the group can effectively address the operation of the school as an instructional organization. From this broader perspective, principals can influence teaching and learning through different approaches, even through non-instructional activities, such as keeping the classroom clean and making teaching materials readily available.

This broader definition of instructional leadership is generally in congruence with the FWL Model of instructional leadership developed by Dwyer, Lee, Rowan, and Bossert (1983). The FWL Model was later tested, modified and ameliorated by other

studies (Hallinger & Murphy, 1985, 1987; Glasman & Heck, 1992; Leitner, 1994; Lee, 1995). In essence, the FWL Model of instructional leadership believes that principals' management behaviors do not directly impact student learning. A principal's instructional management behavior affects two features of the school's social organization -- climate and instructional organization. These are the contexts in which various social relationships are formed and which, in turn, shapes teachers' behaviors and students' learning experiences (Bossert, Dwyer, Rowan, & Lee, 1982).

Graph One

FWL Model of Instructional Leadership



Source: Bossert, Dwyer, Rowan, and Lee, 1982

As illustrated by Graph One, a principal may exercise instructional leadership through the manipulation of the factors associated with instructional organization, such as: time on task for students, class size and composition characteristics, the task and activity structures in schools, curriculum pacing and sequencing, and teacher evaluation (Bossert, 1984). They also can influence instructional management through the creation of an organizational climate befitting for teaching and learning. Such an organizational climate may include the preservation of a safe and orderly school environment, high expectations and timely recognition for achievements, and a cooperative relationship with teachers working toward common goals.

In order to make school's organizational climate and instructional programs conducive for instructional improvement, principals must engage in a number of instructional management activities. According to Hallinger and Murphy (1985; 1986), these management activities include: framing clear school goals and communicating them effectively to mobilize staff energy and school resources; monitoring classroom instruction and providing active support to curriculum development; monitoring student progress and protecting instructional time; promoting a positive school learning environment and maintaining high visibility; providing incentives for teachers to strive for excellence and promoting professional development. These activities are what principals supposed to do as school leaders. Many of them may be viewed as managerial activities, but as long as they are channeled into the realm of instructional improvement, they ought to be regarded as instructional leadership behaviors. As De Bevoise (1984) argued, the concept of instructional leadership should be broadly interpreted to "encompass those actions that a principal takes, or delegates to others, to promote growth in student learning (p.15)."

Principals' instructional management activities may affect their school's learning climate and instructional organization, but according to the FWL Model, principals' management practices are themselves influenced by a range of environmental factors, starting with their own personal characteristics. Other factors may include the characteristics of schools and external environmental factors such as the social-economic condition of the local communities (Bossert, Dwyer, Rowan & Lee, 1982). Principal characteristics could include (1) principals' work experience, education, and training; (2) their gender, race, and age; and (3) their income, compensation, and length of workday. School contexts refer to factors such as the socio-economic status of the district; general education levels of parents; crime and violence situation; school size, level and geographical location; class size, teacher-student ratio, and teachers' qualifications and trainings.

III. Contextual Factors and Instructional Leadership Effectiveness

The importance of contextual factors is recognized by researchers of effective schools. Hart (1992) believed that school contexts must be part of any comprehensive attempt to evaluate the appropriateness and utility of principals' actions. Attempts to assess principal performance out of context are unfair, because principals' impacts on student outcomes are indirect and must rely on the dynamics of social interactions. Dwyer (1986), after observing the instructional leadership practices of seven principals, commented that despite efforts committed to follow sound practices, principals carried the "foibles and idiosyncrasies" that in some form burdened them all. Each of the principals must struggle with the day-to-day realities of his or her own limitations -- personal and contextual. As Salley et al. (1979) described, " principals are captives of their environments.... the size of the school system, size of the school, and number of grade levels in the school are organizational variables that influence the principal's definition of his or her work", and "ethnic and socio-economic characteristics play a significant part in defining the work of the principals (p.33-35)."

Although many studies have established that principals can have substantial impacts on the learning climate and instructional structure of their schools, such impacts may be less tangible and more difficult to measure than originally thought. Adding to this complexity is the fact that school contexts and personal characteristics of principals are quite diverse. We are still unclear about the specific manner and unique context in which principals as instructional leaders can achieve better school outcomes. As Glasman and Heck (1992) pointed out, "measures of school demographic composition, organization, school variables such as climate and culture, and achievement are all correlated, so it has been difficult to unravel and isolate the effects of any particular set from the others (p.9)." It is mainly due to this complication that in studying the general patterns of behaviors and attitudes of principals that we should pay particular attention to their special roles and responsibilities under different contextual conditions.

Recently, there have been some efforts in the education administration research community to study how school contexts and principal characteristics are related with principals' instructional leadership behaviors. In these studies, contextuai factors are

viewed as influencing the value orientations, thinking processes, and management behaviors of principals. Most of these studies found the relationship between school contexts and principal behaviors non-coincidental. But they were not certain that such relations are causal either (Glasman & Heck, 1992; Hallinger & Murphy, 1986; Glasman, 1984). Among these efforts to explore the relationship between contextual factors and principals' effectiveness in instructional leadership, Heck and Marcoulides's study (1990) focused on school variables such as school level and school size. Findings from their study were based on data collected from a mail survey with 30 principals and 166 teachers using a 5 point Likert scale mail questionnaire.

In their study, Heck and Marcoulides (1990) attempted to test the generalizability of the FWL model of instructional leadership and the hypothesis that elementary principals exert stronger leadership influences than their high school counterparts. Outcomes of their data analysis indicate that the FWL model has a high level of generalizability. Especially, they found that principals' role in establishing strong instructional organization of the school's core technology was a domain that was highly predictive of building strong climate and student achievement. Within this domain, more frequent direct contacts with teachers through clinical supervision was associated with higher student achievement. This finding confirms the FWL model's argument that principals' influence on students achievement can only be reached through teachers as a medium. Heck and Marcoulides (1990) also found that contrary to expectations, there was no discernible difference between elementary and secondary principals in their impacts on student achievements. They believed that such an indifference was due to the fact that the same instructional leadership strategies can be equally effective in elementary and secondary schools.

In another study, Hallinger, Bickman, and Davis (1990) set out to investigate how principals' gender and the socio-economic conditions of their school districts would influence their effectiveness as instructional leaders. Hallinger, Bickman, and Davis' study employed a number of data collection methods, including a mail survey with 87 school principals and the analysis of school personnel evaluation records. Using a structural modeling technique, they estimated the effects of four sets of variables on

principal instructional leadership: community context, institutional context, principals' personal beliefs, and principals' experience. Among the factors examined, they identified principal's gender, socio-economic condition of school district, and parental involvement as three most significant predictors of principals' effectiveness in instructional leadership. In general, female principals in economically well-off areas have the best instructional leadership performance when there is also a high level of parental involvement in student learning.

Studies on the contextual factors of schools provided valuable insights on how the external environment can condition principals' instructional management behaviors. However, the personal characteristics of principals may also have impacts on principals' leadership behaviors. Smith, Maehr, and Midgley's study (1992) examined the influences of personal characteristics such as gender, age, work experience, and personal beliefs. Among their key findings, Smith, Maehr, and Midgley highlighted a "provocative" (p.116) discovery: while there exists a positive relationship between a principal's age and his/her efforts in promoting instructional climate, the years of administrative experience are negatively related to the principal's efforts in promoting a positive instructional climate. Does this mean that the longer a person stays as a principal, the less likely he/she will be an effective instructional leader? But their findings also suggested that the older a principal, the more likely he/she would be an effective instructional leader. Could it be true that principals that were considered effective instructional leaders are those long-time teachers who become principals late in their career? These questions need to be pursued further.

Clearly, the studies on the contextual factors have generated valuable information regarding the environmental influences on principals' abilities and effectiveness to lead their schools' instructional programs. Some researchers attempted to prove that principals have direct impacts on students' achievements (i.e. Hannaway and Talbert, 1993). The studies on the contextual factors indicate that making such a direct connection may be too simplistic and premature. As Hallinger, Bickman, and Davis pointed out, "effects of principal leadership on student learning are primarily indirect..... Ultimately, it is less important to know the degree of direct effect principals have on

student learning than it is to understand the ways in which principals can shape an effective educational program (p.28)." This is because that principal leadership is really contingent upon key environmental forces. In order to be effective leaders, principals must learn to identify these forces and to find optimal ways to respond to them.

IV. Research Questions and Data

Despite their contributions to the understanding of the contextual influences, studies on instructional leadership also have their limitations. First of all, they had relatively narrow scope of investigation. Most studies focused on a small number of variables for investigation, hence lacking a comprehensive perspective on the overall effect of contextual factors and the interactions among them. Consequently, we are getting an incomplete and sometimes conflicting picture on how contextual factors are associated with principals' leadership behaviors. Secondly, they employed research methodologies that may not support the level of generalizations that they asserted in their conclusions. As Heck and Marcoulides (1990) suggested, most studies used case studies, correlational models, and ethnographic approaches to probe the relations between school contexts and leadership behaviors, which has not allowed the exploration of these relations in a multivariate framework. Moreover, most studies had only a small number of cases to work with. For studies that had only 30 to 100 cases, the generalizability of their findings to the national population is quite weak.

To overcome these limitations, this study chose to perform the analyses by using the database available from the Schools and Staffing Surveys (SASS) conducted by the National Center for Education Statistics. SASS includes survey components for teachers, principals, and schools. It is the largest and most comprehensive survey of its kind in the United States. There are several advantages for using this data source: First of all, it has a large and comprehensive sample of principals from all varieties of schools. It includes not only principals from public schools of different sizes, locations, and levels, but also private schools of different group types and religious affiliations. The 1987-88 SASS has a sample size of 9,317 public school principals and 3,513 from private schools (NCES, 1994) while the 1990-91 SASS has a sample size of 9,330 public principals and 3,270

private principals (Kaufman and Huang, 1993). Such a high degree of representativeness affords researchers the opportunity to conduct analysis down to the basic level of the stratification sampling structure. For example, there are enough cases for comparing three different types of Jewish schools in the private school sample (Broughman, McLaughlin, O'Donnell, and Ries, 1995).

Secondly, the school administrator survey is inherently integrated with other components of SASS. For every school included in the survey, its principal and a number of teachers within the same school would also be surveyed. The school's file is also linked with the school district's file. These inter-file linkages provide a high degree of flexibility to data users for incorporating relevant variables from other databases. For example, while the school survey provides contextual information regarding the schools in which principals fulfill their leadership roles, the teacher survey supplements additional information on how well principals perform such leadership roles (from teachers' perspective). Moreover, the school administrator questionnaire has maintained a high level of consistency over the past surveys that many of the core items remain unaltered. Such a consistency allows researchers to evaluate the changes overtime in many areas of the principalship.

So far, three separate SASS surveys have been conducted for the following periods: 1987-88, 1990-91, and 1993-94. Taken together, SASS provides a comprehensive portrait of each component of the educational system. It includes not only survey items that describe the contextual variables of schools, individual characteristics of teachers and school administrators, but also perceptions of teachers and principals over a wide range of school management issues. The availability of these survey items enabled the author to examine the relations between school contexts / principal characteristics and principals' instructional leadership behaviors in depth. This study will use the 1993-94 SASS database, the latest in the three waves of surveys.

This research is exploratory in nature. The primary objective of this study is to provide a comprehensive overview on how contextual factors are associated with principals' instructional leadership behaviors. In the process of achieving this objective, I would like to attempt the answering of the following research questions: (1) what are the

relationships between principal characteristics and principals' perceived instructional leadership effectiveness? (2) what are the influence of school contexts on principals' perceived effectiveness in instructional management? (3) what are the interactions between principal characteristics and teacher characteristics and how do these interactions affect principals' perceived instructional leadership effectiveness?

V. Variables and Data Analysis

(a) Dependent Variable

In congruence with the more encompassing concept of instructional leadership advocated by Bossert, Dwyer, Rowan, and Lee (1982); Hallinger and Murphy (1984, 1987, 1993), Heck and Marcoulides (1984, 1993), and Dwyer (1986), this study agrees that as principals' behaviors are organized within the school effectiveness framework, it becomes increasingly evident that a traditional and narrow definition of instructional leadership is no longer useful. Indeed, virtually all managerial activities associated with the improvement of the school's learning climate and instructional organization should be considered as functions of instructional leadership. The implementation of these functions of instructional leadership may require principals to engage in activities that promote excellence in teaching and learning, such as: setting clear and achievable goals, providing praise and recognition, encouraging decision participation among teachers, cultivating a positive school climate, and promoting a safe and orderly learning environment (Pitner & Hocevar, 1987; Hallinger & Murphy, 1985).

Guided by this concept of instructional leadership, I chose to use the teacher's component of the School and Staffing Surveys (SASS) to construct an index of principal instructional leadership. In the "Perceptions and Attitudes Toward Teaching" section of the SASS survey of teachers, teachers were asked to provide their assessment on a number of school management issues. Many of them are related directly to principals' effectiveness in instructional management. For example, teachers were asked to state their satisfaction levels with principals' efforts in securing teaching materials for schools

or the attention devoted by principals to teachers' instructional improvement. There are totally 25 items in this "Perceptions and Attitudes Toward Teaching" section of the 1993-1994 SASS survey (NCES, 1995). A factor analysis was performed to assess the factor grouping of all 25 items. Subsequently, 10 items were finally selected to construct the **index of principal instruction leadership** (hereafter called PIL index). The 10 selected items are all significantly associated with the first factor (the factor with the largest Eigenvalue). These items and their respective statistics are included in Table One.

The dependent variable for this study is therefore the weighted[1] average score of the PIL index. This index includes items that scan teachers' perceptions on the following issues: principal's fairness in teacher evaluation, principal's expectations for staff, administration's support to staff, teachers' participation in decision-making, principal's ability to secure resources for school, principal's willingness to enforce school rules, principal's attention to instructional practices, principal's commitment to school missions, recognition for achievement, and lastly, clarity of school goals and priorities. The use of teachers' perceptions to evaluate principals' performance in these areas of instructional management is clearly justifiable since principals' contribution to school outcomes is contingent upon their abilities to work collaboratively with their teachers. As the FWL model suggests, principals' instructional leadership is indirect leadership. Much of the effects of instructional management have to be realized through teachers' participation. Therefore, it is natural that teachers' perspective is a viable and convincing source of information on the effectiveness of principals' instructional leadership.

(b) Independent Variables

The SASS includes surveys of teachers, principals, schools, and school districts. After the databases for these four components were merged, five clusters of independent variables were identified along two dimensions:

Dimension One: Principal Characteristics

- Cluster 1: Personal attributes of principals: gender, age, race/ethnicity.

[1] Please read the Independent Variable section for a description of the final weight used in this study.

- Cluster 2: Education and training: highest degree attained, availability of academic major in Education Administration, in-service training in evaluation or supervision, training in management technique, and participation in principal internship.
- Cluster 3: Professional experience: teaching experience, administrative experience, other experience such as department heads, assistant principal, guidance counselor, or athletic coach.

Dimension Two: School Contexts

- Cluster 1: Physical environment of schools: region, size, level, urbanicity.
- Cluster 2: Socio-economic conditions of schools: percentage of minority enrollment, percentage of minority teachers, percentage of students received free or reduced-price school lunch, availability of English as Second Language program for students with limited English proficiency.

(c) Data Analysis Objectives and Strategies

The central purpose of this study is to understand whether these independent variables are effective predictors of the variations in the dependent variable (weighted average score of the PIL index). In other words, we want to know whether there are significant differences among different groups of principals that we can make some general statements about the effectiveness of a principal's instructional leadership by knowing his/her association with certain groups. As the first ever effort to use a national database to study contextual factors of instructional leadership, my chief objective is to provide a basic and complete statistical profile on how these factors are related with principals' instructional management effectiveness. As an initial effort, the primary interest here is in the main effects of the contextual variables. Interactions or joint effects are important, but will be deferred to more in-depth analysis in the author's continuous efforts to utilize the SASS database to study instructional leadership behaviors.

Since the dependent variable, after taking the average from the sum of the 10 index items, can be considered an interval scale variable, and most independent variables are categorical in nature (i.e. female vs. male, Black vs. White), statistical analysis techniques such as analysis of variance (ANOVA) and regression with dummy-coded independent variables would be appropriate. Throughout the entire process of data analysis, a final weight is used to adjust to the design and sampling effects of the surveys. The final weight is derived from the following formula:

Final Weight[4] = (Total number of observations / Sum of Teacher's weights) * Teacher's Weight

The final weight is based on the teacher's weight, because the dependent variable, the weighted average score of the PIL index, is derived from teachers' perceptions. Also, by using teacher's weight, we can secure an unique teacher's weight for every observation even when the databases are merged together[5]. The merge of the databases creates a sample size of 47,105 cases for the public school population and 8,372 cases for the private school population. Such a large sample size is unparalleled in any other surveys and it practically guarantee that any significant differences in instructional leadership effectiveness will be detected. Furthermore, with the large number of explanatory variables available, the basic information thus derived will be extensive enough to generate a comprehensive profile of the contextual factors that are believed to be associated with principals' leadership behaviors. Such findings will be useful for guiding further research in this important area of principalship study and will help shed light on a number of important policy issues.

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[4] Please see Kaufman and Huang (1993) and Gruber, Rohr, and Fondelier (1993) for detailed discussions on the weights used in the Schools and Staffing Survey conducted by the National Center for Education Statistics.

[5] In the SASS survey, each principal and a varied number of teachers within the sample schools were surveyed. Thus, each teacher would have his/her unique assessment while the principal's condition is common to all teachers from the same school.

V. Findings and Discussions

One-way ANOVA results for all variables (both private and public school samples) are listed in Table Two. These results provide a general description of the group differences in the independent variables with regard to principals' perceived effectiveness in instructional leadership. In general, it seems that principal characteristics and school contexts of public schools have stronger associations with the effectiveness of principals' instructional leadership than private schools. For public schools, personal attributes such as gender, race, and age all have significant associations with principals' effectiveness scores. For private schools, race is not a factor in explaining principals' performance while the influence of gender is moderate. Principals' education level and professional training do not seem to have effects on principals' instructional leadership. Of the five variables in this cluster, none is strongly associated with both private and public school principals' effectiveness in instructional management. Of school contextual variables, regional difference, school size, school's grade level, percentage of minority enrollment, and percentage of students receiving free or reduced school lunches are significant factors for both the public and private school samples.

While one-way ANOVA can tell us whether there is significant group difference for a particular variable, it cannot tell us the magnitude of the difference. To obtain the magnitude of the difference, regression analyses using dummy-coded variables were used to generate parameter estimates. Table Three through Table Seven list regression analysis results for the five clusters of independent variables on the dependent variable. Each table includes bivariate models for every single independent variable and a multivariate model that takes into account all independent variables within the same cluster. For example, for the "Personal Attributes" cluster, there are separate bivariate models for gender, race, and age and there is also a multivariate model in which all three variables are considered. This format is consistently followed for all clusters of independent variables.

(a) Personal Attributes

For the "Personal Attributes" cluster, the reference group is non-Hispanic White, male, and less then 30 years old principals (see Table Three). Regression outcomes indicate that there are significant differences between male and female principals for both public and private schools, though the differences are stronger in public schools. For both public and private samples, female principals are more positively rated by their teachers with regard to their instructional leadership effectiveness. When race and age are held constant, female principals in general are rated 0.040 and 0.109 points higher than male principals for private and public schools, respectively. Such differences are more dramatic in public schools given the fact that public school sample has a much lower intercept than the private school sample. This finding is not a surprise at all. Previously studies also documented such a disparity (Bossert et al. 1982; Ahadi, 1990; Hallinger, Bickman, & Davis, 1990). Female principals in general are simply better perceived than their male counterparts in instructional management, the finding here only confirms it with more convincing national scale data.

Among the racial/ethnic groups, Whites in general are rated more positively than principals of other races in public schools. In private schools, race does not seem to be a factor in predicting a principal's instructional leadership. Test statistics indicate no significant difference among Black, White, and other minority principals in private schools. However, principal's age is a factor in private schools but not in public schools. While principal's age in general has some positive yet weak relations with principals' performance in public schools, it is a negative and significant factor for private school principals. On average, private school principals who are 40-49 years old are rated 0.226 points lower than principals who are less than 30 years old while principals who are 50 or older are rated 0.233 points lower.

In sum, outcomes listed in Table Three indicate that there are significant differences between male and female principals for both public and private schools. Race and age are also significant factors, though their effects vary between public and private schools. In light of these outcomes, it is logical to question whether the personal attributes of the rators (teachers) would have any influence on the perceived effectiveness of

instructional leadership. In Table Eight through Table Ten and Figure One through Figure Three, I gather some evidence to help answer this question. As Table Eight and Figure One indicate, there are some interesting differences between male and female in public and private schools. In private schools, both male and female teachers rated male principals higher than female principals while the opposite is true for public schools. In the public school sample, both male and female teachers rated female principals higher than male principals. The margin of gender difference is more dramatic in public schools.

In addition to gender difference, there are also some interesting findings for racial and age differences in teachers' perceptions of principals' role in instructional management. Means test for group differences using two-way ANOVA indicates that teachers of other minority groups give Black (non-Hispanic) principals the highest mark in private schools but the lowest mark in public schools. While Black teachers consistently rate White (non-Hispanic) principals the highest in both public and private schools, the opposite is true for Black principals. White teachers consistently rate Black principals the lowest (see Table Nine and Figure Two for detail) in both public and private schools. Among different age groups, public school principals who are 30-39 years old are ranked consistently higher than other groups of principals by teachers of all age groups. Among private schools, older principals are rated lower by younger teachers while younger principals in general are rated higher by teachers of all age groups.

(b) Education and Training

There are five independent variables within the cluster of "Education and Training": highest degree attained, availability of academic degree in education administration, in-service training in evaluation/supervision, training in management techniques, and participation in principal internship program. Regression analysis results indicate that higher degrees (Master or beyond Master's degree) make no significant difference among public school principals in terms of their perceived effectiveness in instructional leadership but is significant for private school principals, if education level is the only factor being considered. However, when other factors such as academic

major, in-service training, principal internship, and training in management techniques are also considered, education level are shown to be significant and positive factors for both public and private school principals. As Table Four shows, the higher the education level, the higher the rating for school principals, though this trend is more obvious in private schools. Overall, private school principals who have a Master's degree are ranked 0.152 points higher than principals with a Bachelor's degree or less while principals with more than Master level education are ranked 0.206 points higher.

Most states require principals to have a degree in education administration in order to qualify for a principal license. Nevertheless, statistical evidence from this study fails to provide support to the logic of this requirement. While having a degree in education administration makes no difference for private school principals in terms of their perceived effectiveness of instructional leadership, it decreases the rating of principals in public schools. Public school principals who have a degree in education administration are rated 0.101 points ($p < 0.001$) lower than other principals when other factors are being held constant. Commenting on the academic background of principals, Rallis and Highsmith[6] stated that "most principals hold degrees in administration, not advanced degrees in teaching or curriculum or philosophy of education. Thus most principals are trained as managers and are simply not prepared to meet the schools' needs for instructional leadership." Judging from what we learned from the SASS data, Rallis and Highsmith do make an excellent observation.

Other types of professional training, such as in-service training in evaluation and supervision, training in management techniques, or principal internship do not seem to have any discernible effect in promoting effective instructional leadership. Parameter estimates in Table Four indicate that these trainings are not significantly associated with principals' perceived effectiveness in instructional management. These findings seem to cast doubts on the value of the certificates issued to principals after they go through those mandatory or voluntary training programs. All indications suggest that the training available to principals are not effective in helping principals improve their instructional

[6] Rallis, S. and Highsmith, M. (1987). The myth of the "great principal": Questions of school management and educational leadership. Phi Delta Kappa, December issue.

management techniques. As early as in 1982, Bossert, Dwyer, Rowan and Lee had already pointed out the inadequacy of principal training programs in helping principals prepare for instructional management. The study by Bjork and Ginsberg (1995) and the findings here re-confirm this assessment.

(c) Professional Experience

Schools that are looking for new principals often stress the need to seek candidates who are well-versed in both school teaching and school administration. The underlying assumption is that the more experienced in teaching and administration, the better prepared the candidates are as effective school leaders. However, findings from the regression analyses of variables within the "professional experience" cluster do not render much optimism for this assumption (see Table Five). While it remains unclear whether teaching experience is a positive factor associated with principals' performance in instructional leadership, administrative experience is obviously not a positive one. Results from both bivariate models and the multivariate model indicate that in general, the longer a principal stays in school administrative positions, the more negatively he/she is perceived by teachers. This is especially true among public school principals. Holding other factors constant, in general, one more year of administrative experience can decrease 0.003 points ($p < 0.001$) from a public school principal's perceived effectiveness in instructional leadership.

In a comparative study between new and experienced principals with regard to their leadership behaviors, Bogotch and Riedlinger (1991) found significant differences between the two groups of principals. They observed that "new principals gave more emphasis to instructional tasks than did experienced principals" and "instructional emphasis will dissipate with experience (p.11)." The reason behind this phenomenon, as the authors explained, is because there are too much conflicts between principals and teachers and between principals and school districts in setting instructional policies. Hence, most experienced principals would have been through a lot of stress in trying to change instructional programs and as the years go by, they lose their enthusiasm and interest in getting involved with instructional improvement. This observation may be just

a speculation, but the difference discovered between new and experienced principals is in congruence with what we found from analyzing the SASS data.

Other professional experience, such as experience as department head, assistant principal, guidance counselor, or athletic coach is not helping, either. Public school principals who are without these previous experience are generally viewed more favorably by their teachers. Results from the multivariate regression model indicate that these professional experience are consistently the unfavorable factors for public school principals. In private schools, such a straight negative rating is not so obvious. Private school principals who had experience as department head or assistant principal before are rated generally lower, but their experience as guidance counselor or athletic coach basically have no effect. Judging from the heavy weight school districts give to administrative experience when they hire new principals, it is quite unsettling to find out the longer the administrative experience, the less likely a principal will become effective instructional leaders, at least from teachers' perspective.

(d) Physical Environment of Schools

One of the two clusters of independent variables that belong to the school context dimension is the "physical environment of schools". It includes the following variables: region, enrollment size, school level, and urbanicity. Overall, teachers in the South and in the West are more positive about their principals' effectiveness in instructional leadership. This applies to both public and private schools. While public school principals from the South region are rated the best, private school principals from the West are ranked the highest by teachers. The size of the school is often mentioned as a possible factor for influencing leadership effectiveness. In this study, school's enrollment size seems to be a significant factor only in public schools. While enrollment size has no observable impact on the perceived effectiveness of private school principals when everything else is being held constant, it has a significant effect on public school principals. As parameter estimates from the multivariate model (see Table Six) reveal, for the increase of every student in the total enrollment size, the perceived effectiveness of

public school principal's instructional leadership drops 0.0001 point, and it is statistically significant.

The grade level of schools is also a factor in influencing principals' perceived effectiveness in instructional leadership. In general, principals of both public and private schools that only serve secondary level students are rated more negatively than principals of schools that only serve elementary level students. Given the greater complexity in terms of organizational maintenance and core technology development for secondary schools, this finding is not a surprise at all and is clearly supported by findings from other studies (Hallinger & Murphy, 1987; Klein-Kracht, 1993). Slater and Teddlie (1992) believe that elementary schools are typically smaller than middle and high schools. Since instructional improvement is easier for smaller schools, it is no wonder that elementary school principals display more instructional leadership.

In addition to school size and grade level, the area where a school is located may also have influence on teachers' perceptions. In the public school sample, principals in suburban schools are in general more favorably rated than their counterparts in central city schools while principals of rural and small town schools are not rated significantly different from central city school principals. For the private school sample, principals in rural and small town schools are generally rated more favorably than their counterparts in central city schools while principals in suburban schools are not rated differently from central city school principals. These findings seem to suggest that there is a locational difference and that principals at central city schools are least likely to be considered as effective instructional leaders.

(e) Socio-Economic Conditions of Schools

Another cluster of the "school context dimension" is the socio-economic environment of schools. Ideally, we would want to use variables such as average household income, medium property value, parents' education level or other economic indicators to evaluate the socio-economic conditions of districts where schools are located. However, there are difficulties for reaching this ideal state since the SASS database does not contain such information. As an alternative, several variables are used

instead to create proxy measures of the socio-economic conditions of school districts. These variables include: percentage of minority enrollment, percentage of minority teaching staff, percentage of students received free or reduced-price school lunches, and availability of English as Second Language (ESL) programs for students with limited English proficiency (LEP).

Findings from regression analyses reveal mixed outcomes (see Table Seven). Based on the multivariate model, it appears that the only variable that clearly has influence across sector on principals' perceived effectiveness in instructional leadership is the percentage of minority enrollment. In general, for every percentage point increase in minority enrollment, the perceived effectiveness of instructional leadership decreases by 0.001 point, everything else being equal. This trend is statistically more significant in public schools. Percentage of minority teaching staff is a positive factor for private schools, but has no observable effect in public schools.

Percentage of students receiving free or reduced-price lunch is a variable that can best capture the affluence level of students' families. Because some schools do not participate in school lunch programs, the analysis for this part only include those schools that participated in school lunch programs. It is assumed that the higher the percentage of students received free or reduced-price school lunches, the lower the level of students' family incomes. Findings indicate that among public schools that participate in school lunch programs, the higher the percentage of students who received free or reduced-price lunches, the higher the perceived effectiveness of instructional leadership for their principals. Everything being equal, one percentage point increase will lead to 0.001 point increase in public school teachers' rating of principals. Among private schools, participation in free or reduced-price lunch programs has no observable impacts on principals' perceived effectiveness.

These findings seem to contradict with the conclusions from other studies that principals in lower income areas are perceived more negatively by teachers (Hallinger & Murphy, 1986a; Leitner, 1994; Slater and Teddlier, 1992). It is unclear why there is such a contradiction. Perhaps, the use of participation in free or reduced-price lunch program as a variable to measure the affluence level of student families is not a proper one. More

in-depth analysis in conjunction with other variables need to be conducted in order to gain better insight on this matter.

Lastly, it is assumed that schools that have special programs for students with limited English proficiency are usually those schools that are located in areas where there are more diverse ethnic or immigration groups. The availability of ESL programs in schools therefore is a proxy variable used to measure the cultural diversity of the area where a school is located. Parameter estimates using this variable as a dummy together with other socio-economic variables show no discernible effects within both public and private schools. In other words, principals' instructional management behaviors do not seem to be affected by the existence of a relative large share of bilingual students.

(f) Differences Between Public and Private Schools

The regression analyses using models with five clusters of independent variables reveal some interesting findings on how the personal attributes, educational background, and work experience of school principals and the physical and socio-economic environments of schools are associated with principals' effectiveness in instructional management. Transcending these discussions is the grand divide between public and private schools. This division provides us with the opportunity to examine the sectoral differences between public and private schools, an added dimension valuable for policy analysis.

In the above discussions, I frequently compare the differences between public and private school principals along with five clusters of variables. The differences between the two sectors appear to be many and real. Factors such as race, age, education, and training of principals or location, size, and grade level of schools all seem to find their differences in this comparison between public and private school principals. Private school principals in general are regarded more highly by their teachers in terms of their leadership effectiveness. This finding is supported by the consistently higher intercept values of the private school sample throughout all regression models. While it is not the major objective of this paper to explore the sectoral differences in teachers' perceptions, the findings thus far clearly establish the existence and significance of these differences.

Chubb and Moe (1985) believe that the differences between public and private schools in principal leadership are significantly large. These differences are mainly due to the different environmental constraints that public and private schools must face. They argue that "depending on the nature and strength of environmental effects on the school, the principal may have only a marginal effect on school performance. Effective schools may indeed be led by strong principals, but their strength may derive substantially from their environment (p.18)." Judging from the obvious differences in instructional leadership between public and private school principals, it is logical to believe that public and private schools do inherit different environmental constraints, such as school financing arrangements, governance structures, incentive systems, and other factors. Such differences beg for further studies to understand how public schools can be better structured to reduce their environmental constraints.

VII. Conclusions

One of the key objectives of this study is to use statistical evidence to assess how personal characteristics and contextual factors are associated with principals' instructional leadership behaviors. According to the instructional leadership model advocated by Bossert, Dwyer, Rowan and Lee (1982) of the Far West Laboratory for Educational Research and Development, principals may influence student learning indirectly through the manipulation of school's climate and instructional organization. But such influences are conditioned by a number of environmental factors, such as principals' personal characteristics, school district conditions, or other external factors. These environmental factors may become constraints on principals' abilities to exert leadership, or, they may be favorable conditions for facilitating principals' instructional management. Research on principals' role in instructional leadership must deal with these factors in order to understand how principals' capability in shaping instructional programs are limited or facilitated by these environmental factors.

In recent years, there have been some efforts to study how contextual factors are associated with principals' instructional management behaviors. For example, Heck and Marcoulides' (1990) study on the differences between elementary and secondary schools,

Hallinger, Bickman, and Davis' study (1990) on gender differences and socio-economic conditions, and Smith, Maehr, and Midgley's study (1992) on age, work experience, and personal beliefs of principals all probed the significance of contextual factors on principals' instructional management behaviors. These studies have generated valuable information regarding the environmental influences on principals' abilities and effectiveness in leading the school's instructional improvement. Nevertheless, these studies did not address the contextual factors in a systematic manner and their analyses were usually based on relatively small sample sizes. Hence, findings from these studies do not provide us with a comprehensive perspective on the influences of contextual factors and the generalizability of their findings to the national population is limited.

In order to address the limitations of these studies, this research set forth to utilize the national educational database developed and maintained by the National Center for Education Statistics through their Schools and Staffing Survey (SASS). The SASS is a comprehensive survey of schools, principals, and teachers in 50 states and all territories of the United States. It has a combined sample size of more than 50,000 cases, large enough to claim the number one spot in all school staffing surveys on this planet. With such a large sample size and a carefully planned stratification sampling process, SASS is highly representative of almost all possible school types and environmental conditions available to schools. By using this database to conduct analysis over the contextual influences on principals' instructional leadership, we have perhaps the best chance to generate a comprehensive picture on those factors that are significantly associated with principals' instructional management behaviors.

The statistical analyses conducted by the author in this paper have addressed only the main effects of the contextual variables. With more complex joint effects or interactions to be explored in separate studies, this endeavor has examined the basic relations between a wide range of contextual variables and principals' perceived effectiveness in instructional leadership. In summary, it appears that a number of factors does have significant influence on principals' effectiveness in instructional management. For example, factors such as gender, age, education, work experience, school size, unbanicity, and percentage of minority enrollment are tested as significantly related to

principals' perceived effectiveness in instructional leadership, either positively or negatively. Some factors that were previously assumed to be important factors are proved to be insignificant. For example, principals' trainings, their academic major in education administration, school's cultural diversity, and affluence level of students' families (measured by percent of students received free or reduced price school lunch) do not seem to affect principals' instructional management behaviors.

These findings provide education researchers and policy-makers with perhaps more questions than answers. If female principals are consistently rated higher than male principals, then why there are so few women in the principal workforce? If administrative experience is negatively related with principals' perceived effectiveness, then why do school boards always stress the need to hire experienced and fully credentialed principals? If the larger the school, the more difficult for principals to improve school's instructional programs, why can't we downsize those large schools to create better teaching and learning environment? And, if private schools consistently outperform their public counterparts, do we know what make them better? Can we duplicate the environmental or organizational factors so that the differences between private and public schools can be narrowed? Obviously, these are the questions that are important to all those who care about the state of education in this country. The findings from this study beg tor more in-depth analysis of the SASS database in order to gain better understandings on this complex mass of relationships.

References

Acheson, K. (1985). The principal's role in instructional leadership (Bulletin No. 28-8). Oregon School Study Council.

Ahadi, S. A. (1990). Reliability, validity, scope and demographic correlates of teacher rating of instructional leadership (Project Report No. ED 340085). National Center for School Leadership.

Bogotch, I. E., & Riedlinger, B. (1991). Differences between new and experienced principals. In Paper presented at MSERA, . Lexington, KY:

Bossert, S. T., Dwyer, D. C., Rowan, B., & Lee, G. V. (1982). The instructional management role of the principal. Educational Administration Quarterly, 18(3), 34-64.

De Bevoise, W. (1984). Synthesis of research on the principal as instructional leader. Educational Leadership, 41(Feb), 14-20.

Duke, D. L. (1986). The aesthetics of leadership. Educational Administration Quarterly, 22(1), 7-27.

Duke, D. L. (1992). Concepts of administrative effectiveness and the evaluation of school administrators. Journal of Personnel Evaluation in Education, 6, 103-121.

Duke, D. L., & Iwanicki, E. (1992). Principal assessment and the notion of "fit". Peabody Journal of Education, 68(1), 25-36.

Dwyer, D. C. (1986). Understanding the principal's contribution to instruction. Peabody Journal of Education, 63(1), 3-18.

Dwyer, D. C., Lee, G. V., Rowan, B., & Bossert, S. T. (1983). Instructional management program (Research Report No. ED 231085). Far West Laboratory.

ERIC Clearinghouse on Educational Management (1983). Effective instructional leadership (The Best of ERIC No. 67). U.S. Department of Education.

Glasman, N. S., & Heck, R. H. (1992). The changing leadership role of the principal: implications for principal assessment. Peabody Journal of Education, 68(1), 5-23.

Greenfield, W. D. (1986). Moral, social, and technical dimensions of the principalship. Peabody Journal of Education, 63(1), 130-149.

Hallinger, P., Bickman, L., & Davis, K. (1990). What makes a difference? School context, principal leadership, and student achievement (Occasional Paper No. 3). National Center for Education Leadership.

Hallinger, P., & Murphy, J. (1985). Assessing the instructional management behavior of principals. The Elementary School Journal, 86(2), 217-247.

Hallinger, P., & Murphy, J. (1986). The social context of effective schools. American Journal of Education, 94(3), 328-355.

Hallinger, P., & Murphy, J. (1987). Organizational and social context and the instructional leadership role of the school principal. In Paper presented at the AERA annual meeting, . Washington, DC:

Hannaway, J., & Talbert, J. (1993). Bringing context into effective school research: urban-suburban differences. Educationa Administration Quarterly, 29(2), 164-186.

Hart, A. W. (1992). The social and organizational influence of principals: evaluating principals in context. Peabody Journal of Education, 68(1), 37-57.

Heck, R. H., Marcoulides, G., & Lang, P. (1991). Principapl instructional leadership and school achievement. School Effectiveness and Schoo! Improvement, 2(2), 115-135.

Heck, R. H., & Marcoulides, G. A. (1990). Examining contextual differences in the development of instructional leadership and school achievement. The Urban Review, 22(4), 247-264.

Heck, R. H., & Marcoulides, G. A. (1993). Principal assessment: conceptual problem, methological problem, or both? Peabody Journal of Education, 69, 124-144.

Johnson, N. A. (1993). The principal and school effectiveness: principals' perspectives. Journal of Personnel Evaluation in Education, 7, 339-354.

Kleine-Kracht, P. (1993). Indirect instructional leadership: an administrator's choice. Educational Administration Quarterly, 29(2), 187-212.

Larsen, T. (1987). Identification of instructional leadership behaviors and the impact of their implementation on academic achievement. In Paper presented at AERA annual meeting, . Washington, D.C.:

Lee, G. V. (1990). Instructional leadership as collaborative inquiry: opportunities and challenges (Research Report No. ED328995). Far West Laboratory.

Leitner, D. (1994). Do principals affect student outcomes: an organizational perspective. School Effectiveness and School Improvement, 5(3), 219-238.

Murphy, C. (1983). Effective principals: knowledge, talent, spirit of inquiry (Research Brief No. ED234521). ERIC Clearinghouse on School Management.

Pajak, E., & McAfee, L. (1992). The principal as school leader, curriculum leader. NASSP Bulletin, 76, 21-30.

Ploghoft, M. E., & Perkins, C. G. (1988). Instructional leadership: is the principal prepared? NASSP Bulletin(October).

Slater, R. O., & Teddlie, C. (1992). Toward a theory of school effectiveness and leadership. School Effectiveness and School Improvement, 3(4), 242-257.

Smith, J., Maehr, M., & Midgley, C. (1992). Relationship between personal and contextual characteristics and principa's' administrative behaviors. Journal of Education Research, 86(2), 111-118.

Snyder, J., & Ebmeier, H. (1992). Empirical linkages among principal behaviors and intermediate outcomes: implications for principal evaluation. Peabody Journal of Education, 68(1), 75-107.

Stronge, J. H. (1993). Defining the principalship: instructional leader or middle manager. NASSP Bulletin, 77(May), 1-6.

Stufflebeam, D., & Nevo, D (1993). Principal evaluation: new directions for improvement. Peabody Journal of Education, 69(1), 24-46.

Thoms, G. H. (1986). Will the real instructional leader please stand up? Peabody Journal of Education, 63(1), 196-205.

Valentine, J. W., & Bowman, M. (1991). Effective principal, effective school: does research support the assumption? NASSP Bulletin(December), 1-7.

Weber, J. R. (1987). Instructional leadership: contexts and challenges (Bulletin No. 31-3). Oregon School Study Council.

Table One

Index of Principal Instructional Leadership as Perceived by Teachers*
1993-1994

Survey question: Do you agree or disagree with each of the following statements?
1 = Strongly agree 2 = Somewhat agree 3 = Somewhat disagree 4 = Strongly disagree**

Item Label	Full Text of Index Item	Factor Loading@ Private School	Public School
A1195	Teachers in this school are evaluated fairly.	0.715	0.657
A1200	The school head (principal) lets staff members know what is expected of them.	0.798	0.799
A1205	The school administration's behaviors toward the staff is supportive and encouraging.	0.799	0.787
A1220	Teachers participate in making most of the important educational decisions in this school.	0.587	0.612
A1235	The school head (principal) does a poor job of getting resources for this school.	0.598	0.640
A1245	My school head (principal) enforces school rules for student conduct and backs me up when I need it.	0.698	0.724
A1250	The school head (principal) talks with me frequently about my instructional practices.	0.626	0.634
A1265	The school head (principal) knows what kind of school he/she wants and has communicated it to the staff.	0.787	0.794
A1275	In this school, staff members are recognized for a job well done.	0.781	0.758
A1295	Goals and priorities for the school are clear.	0.717	0.711

* Source: Schools and Staffing Survey, 1993-1994, U.S. Department of Education, National Center for Education Statistics. For more information, call 1-800-424-1616.

** Scales for all items except TSC246 were reversed so that the larger the numeric value, the more positive it reflects the agreement with the statement (i.e. 1 = strongly disagree and 4 = Strongly agree). The overall index is weighted by the final teacher's weight deflated. Please read the "Dependent Variable" section for detail.

@ Private School Sample: Cronbach's Alpha=0.888, Eigenvalue=5.11, Variance explained=51.1%. Public School Sample: Cronbach's Alpha=0.891, Eigenvalue=5.11, Variance explained=51.1%.

Table Two

One-way Analysis of Variance of Group Difference in Perceived Instructional Leadership Effectiveness of School Principals 1993-1994

Dimension	Variable	*DF*	Mean Square		*F* Ratio & Significance	
			Private School	Public School	Private School	Public School
Personal Attributes	Gender	1	2.574	93.385	7.97**	248.02***
	Race	4	0.171	9.825	0.53NS	26.01***
	Age	3	2.217	15.172	6.81***	40.09***
Education & Training	Highest Degree Achieved	2	8.542	3.977	26.76***	10.51***
	Field of Study	1	10.661	0.012	32.82***	0.03 NS
	In-service training	1	0.082	6.280	0.25NS	16.56***
	Management training	1	0.592	0.817	1.81NS	2.16 NS
	Principal Internship	1	2.260	0.279	6.93**	0.74 NS
Professional Experience	Teaching Experience	4	0.294	3.678	0.90NS	9.70***
	Administrative Experience	4	0.963	2.986	2.96*	7.87***
	Experience as Department head	1	5.059	17.423	15.54***	45.96***
	Experience as Assistant principal	1	10.142	22.860	31.21***	60.33***
	Experience as Guidance Counselor	1	0.009	7.151	0.03NS	18.85***
	Experience as Athletic coach	1	1.434	30.397	4.40*	80.25***
School's Physical Environment	Region	3	4.679	72.653	14.56***	194.36***
	Size	4	1.778	40.544	5.46***	107.83***
	Level	2	16.785	161.034	53.74***	434.80***
	Urbanicity	2	1.052	6.566	3.26*	17.36***
School's Socio-economic Environment	% of Minority Enrollment	5	2.204	6.821	6.78***	18.01***
	% of Minority Teaching Staff	3	0.238	8.059	0.73NS	22.06***
	% of students eligible for free or reduced-price school lunch	4	2.791	4.889	8.59***	12.90***
	Availability of ESL training for students with limited English proficiency	1	1.460	1.355	4.48*	3.57 NS

*** $p < .001$, ** $p < .01$, * $p < .05$, NS = Not Significant.

Table Three

Parameter Estimates Using Regression Models With Dummy-Coded Variables
1993-1994
Principal Characteristics: Personal Attributes
(Dependent Variable = Instructional Leadership Effectiveness Score)

Models	Variables [a]	Parameter Estimate and *P* - Value		Overall Fit of the Model and *F* - Ratio	
		Private School	Public School	Private School	Public School
Model 1	Intercept	3.273***	2.996***	7.974**	248.020***
	Gender (female)	0.036**	0.097***		
Model 2	Intercept	3.293***	3.039***	0.546NS	43.922***
	Race dummy 1 (Other Minorities)	-0.038NS	-0.061***		
	Race dummy 2 (Black, non-Hispanic)	0.009NS	-0.078***		
Model 3	Intercept	3.31***	3.022***	6.813***	40.086***
	Age dummy 1 (30 - 39)	0.030NS	0.094***		
	Age dummy 2 (40 - 49)	-0.049NS	0.020NS		
	Age dummy 3 (Over 50)	-0.054*	-0.017NS		
Model 4	Intercept	3.491***	2.844***	6.194***	86.348***
	Gender (female)	0.040**	0.109***		
	Race dummy 1 (Other Minorities)	-0.044NS	-0.078***		
	Race dummy 2 (Black, non-Hispanic)	-0.008NS	-0.101***		
	Age dummy 1 (30 - 39)	-0.144NS	0.256*		
	Age dummy 2 (40 - 49)	-0.226**	0.177NS		
	Age dummy 3 (Over 50)	-0.233**	0.135NS		

[a] Reference group: White (non-Hispanic), male, and less than 30 years old.
**** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, NS = Not Significant.

Table Four

Parameter Estimates Using Regression Models With Dummy-Coded Variables
1993-1994
Principal Characteristics: Education & Training
(Dependent Variable = Instructional Leadership Effectiveness Score)

Models	Variables [a]	Parameter Estimate and *P* - Value		Overall Fit of Model (*F*) and *P* - Ratio	
		Private School	Public School	Private School	Public School
Model 1	Intercept	3.136***	2.999***	28.523***	3.283*
	Degree dummy 1 (Master degree)	0.086***	0.032*		
	Degree dummy 2 (Beyond Master)	0.148***	0.022NS		
Model 2	Intercept	3.358***	3.030***	32.816***	0.031 NS
	Degree in education administration	-0.085***	-0.003NS		
Model 3	Intercept	3.285***	2.999***	0.250NS	16.556***
	In-service training in supervision and evaluation	0.007NS	0.033***		
Model 4	Intercept	3.301***	3.020***	1.815NS	2.155 NS
	Training in management technique	-0.017NS	0.010NS		
Model 5	Intercept	3.300***	3.025***	6.934**	0.737 NS
	Participation in principal internship	-0.040**	0.005NS		
Model 6	Intercept	3.004***	2.996***	11.414***	3.843***
	Degree dummy 1 (Master degree)	0.152**	0.076**		
	Degree dummy 2 (Beyond Master)	0.206***	0.067**		
	Degree in education administration	0.0639NS	-0.101***		
	In-service training in supervision and evaluation	0.039*	0.014NS		
	Training in management technique	-0.016NS	0.013NS		
	Participation in principal internship	-0.036*	0.003NS		

[a] Reference group: principals with BA/BS degree, not major in education administration , no in-service training in evaluation/supervision, no training in management technique, not participated in principal internship before.
*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, NS = Not Significant.

Table Five

Parameter Estimates Using Regression Models With Dummy-Coded Variables 1993-1994

Principal Characteristics: Professional Experience

(Dependent Variable = Instructional Leadership Effectiveness Score)

Models	Variables [a]	Parameter Estimate and *P* - Value		Overall Fit of Model (*F*) and *P* - Ratio	
		Private School	Public School	Private School	Public School
Model 1	Intercept	3.298***	3.026***	0.494NS	0.128NS
	Teaching experience (years)[b]	-0.001NS	0.0001NS		
Model 2	Intercept	3.297***	3.045***	0.722NS	26.651***
	Prinicipal experience (years)[b]	-0.057***	-0.047***		
Model 3	Intercept	3.306***	3.037***	15.539***	45.963***
	Department head experience	-0.057***	-0.047		
Model 4	Intercept	3.319***	3.055***	31.213***	60.326***
	Assistant principal Experience	-0.071NS	-0.045***		
Model 5	Intercept	3.292***	3.031***	0.027NS	18.853***
	Guidance counselor experience	-0.004NS	-0.045***		
Model 6	Intercept	3.299***	3.043***	4.398*	80.245***
	Athletic coach experience	-0.031*	-0.057***		
Model 7	Intercept	3.334***	3.113***	6.837***	36.575***
	Teaching experience (years) [b]	0.001NS	-0.000NS		
	Administrative experience (years) [b]	-0.001NS	-0.003***		
	Department head experience	-0.042**	-0.035***		
	Assistant principal Experience	-0.066***	-0.045***		
	Guidance counselor experience	0.019NS	-0.036***		
	Athletic coach experience	-0.02NS	-0.047***		

[a] Reference group: principals without previous experience as department head / curriculum coordinator, assistant principal, guidance counselor, or athletic coach.

[b] Variables are converted back to interval scale.

***$p < 0.001$, ** $p < 0.01$, * $p < 0.05$, NS = Not Significant.

Table Six

Parameter Estimates Using Regression Models With Dummy-Coded Variables 1993-1994

School Contexts: Physical Environment

(Dependent Variable = Instructional Leadership Effectiveness Score)

Models	Variables [a]	Parameter Estimate and *P* - Value		Overall Fit of Model (*F*) and *P* - Ratio	
		Private School	Public School	Private School	Public School
Model 1	Intercept	3.242***	2.941***	11.831***	183.004***
	Region 2 (North Central)	0.041*	0.039***		
	Region 3 (South)	0.083***	0.162***		
	Region 4 (West)	0.094***	0.104***		
Model 2	Intercept	3.312***	3.120***	9.989**	487.505***
	Enrollment Size [b]	-0.0001**	-0.0001***		
Model 3	Intercept	3.319***	3.084***	53.134***	402.164***
	Level 2 (Secondary)	-0.175***	-0.172***		
	Level 3 (Elementary & Secondary)	0.001NS	-0.112***		
Model 4	Intercept	3.281***	3.005***	2.846NS	16.411***
	Urbanicity 2 (Suburbs large and mid-size cities)	0.009NS	0.039***		
	Urbanicity 3 (Rural areas and small towns)	0.042*	0.028***		
Model 5	Intercept	3.259***	3.027***	18.322***	199.554***
	Region 2 (North Central)	0.052**	0.048***		
	Region 3 (South)	0.087***	0.175***		
	Region 4 (West)	0.096***	0.124***		
	Enrollment Size [b]	-0.00001NS	-0.0001***		
	Level 2 (Secondary)	-0.169***	-0.135***		
	Level 3 (Elementary & Secondary)	-0.017NS	-0.131***		
	Urbanicity 2 (Suburbs large and mid-size cities)	0.006NS	0.046***		
	Urbanicity 3 (Rural areas and small towns)	0.054**	0.003NS		

[a] Reference group: principals in Region 1 (Northeast), elementary level schools, and in large and mid-size central urban areas.

[b] Variables are interval scale.

***$p < 0.001$, ** $p < 0.01$, * $p < 0.05$, NS = Not Significant.

Table Seven

Parameter Estimates Using Regression Models With Dummy-Coded Variables 1993-1994

School Contexts: Socio-Economic Environment

(Dependent Variable = Instructional Leadership Effectiveness Score)

Models	Variables [a]	Parameter Estimate and *P* - Value		Overall Fit of Model (*F*) and *P* - Ratio	
		Private School	Public School	Private School	Public School
Model 1	Intercept	3.306***	3.044***	13.764**	30.338***
	% of Minority Enrollment [b]	-0.001**	-0.001***		
Model 2	Intercept	3.285***	3.034***	0.939NS	10.593**
	% of Minority Teachers [b]	0.0001NS	-0.001**		
Model 3	Intercept	3.256***	3.016***	0.681NS	10.067**
	% of students received reduced prince or free school lunch [b]	-0.003NS	0.0003**		
Model 4	Intercept	3.297***	3.032****	4.478*	3.571 NS
	School has English as Second Language program for students with limited English proficiency	-0.038*	-0.010 NS		
Model 5	Intercept	3.268***	3.021***	2.497*	22.155***
	% of Minority Enrollment [b]	-0.001**	-0.001***		
	% of Minority Teachers [b]	0.002**	0.000 NS		
	% of students received reduced prince or free school lunch [b]	-0.0003NS	0.001***		
	School has English as Second Language program for students with limited English proficiency	0.007NS	0.011 NS		

[a] Reference group: Principals in schools that did not offer special programs for students with limited English Proficiency.

[b] Variables are interval scale.

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, NS = Not Significant.

Table Eight

Gender Difference in Teacher's Perception of Principal's Instructional Leadership 1993-1994

	Private School				Public School			
	Male Principal	N	Female Principal	N	Male Principal	N	Female Principal	N
Male Teacher	3.315	3086	3.289	2695	2.953	13017	2.964	2804
Female Teacher	3.277	516	3.243	1665	3.015	21478	3.122	8391

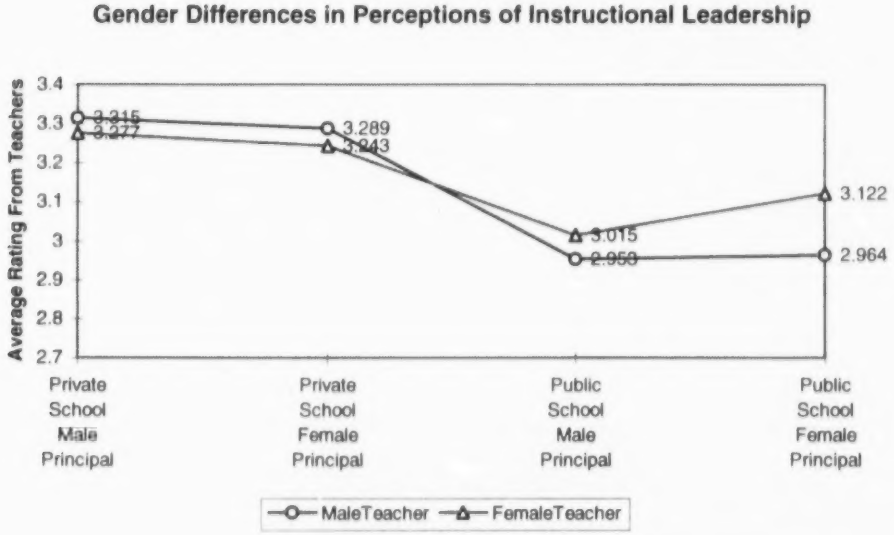

Figure One

Table Nine

Racial / Ethnic Difference in Teacher's Perception of Principal's Instuctional leadership 1993-1994

Race / Ethnicity of Teachers		Private Schools			Public Schools		
		Other Minorities	Black Principals	White Principals	Other Minorities	Black Principals	White Principals
Other Minorities	Mean Score	3.306	3.433	3.277	3.003	2.876	3.047
	N	55	19	401	1259	288	2338
Black	Mean Score	*	3.386	3.444	2.935	3.072	3.156
	N	3	104	139	98	1123	1293
White	Mean Score	3.249	3.175	3.289	2.977	2.911	3.033
	N	158	90	6993	1704	2175	35412

* Number of cases is too small to provide a reliable estimate.

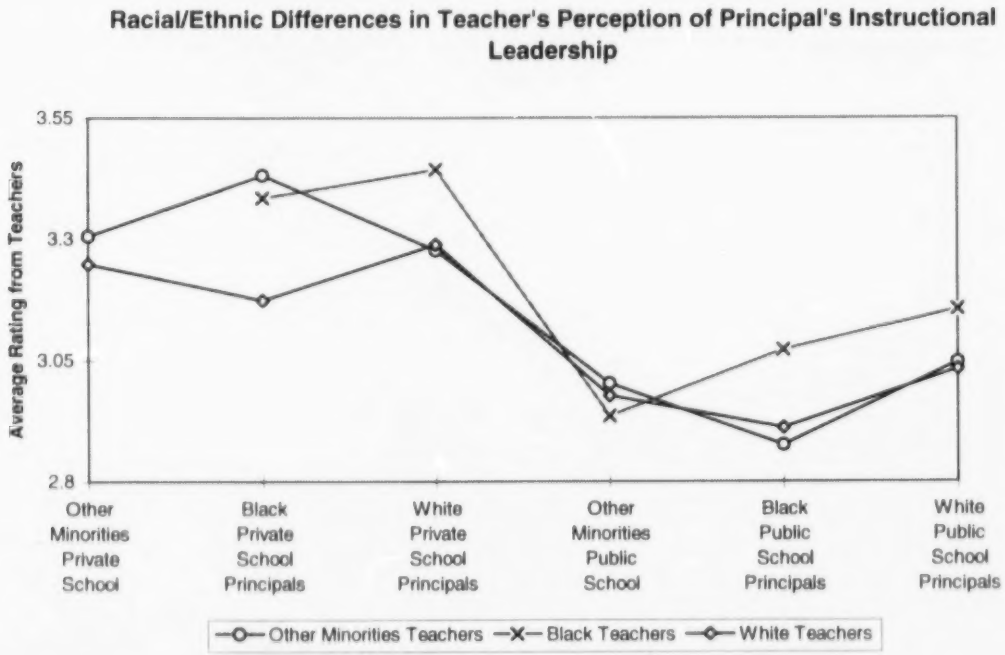

Figure Three

Table Ten

Age Difference in Teacher's Perception of Principal's Instructional Leadership 1993-1994

Teacher's Age		Principals Less Than 30 Years Old		Principals 30 - 39 Years Old		Principals 40 - 49 Years Old		Principals Over 50 Years Old	
		Private School	Public School	Private School	Public School	Private School	Public School	Private School	Public School
Less than 30 Years Old	Mean Score	3.457	3.018	3.312	3.161	3.272	3.102	3.211	3.067
	N	115	157	224	439	623	2521	690	1996
Between 30 - 39 Years Old	Mean Score	3.240	3.056	3.406	3.083	3.202	3.046	3.244	2.991
	N	109	325	310	931	797	5505	848	4374
Between 40 - 49 Years Old	Mean Score	3.269	3.016	3.335	3.106	3.316	3.033	3.273	2.983
	N	142	610	275	1311	1161	9542	1226	7974
Over 50 Years Old	Mean Score	3.388	3.005	3.312	3.147	3.321	3.023	3.353	2.998
	N	103	363	168	715	667	5209	690	5133

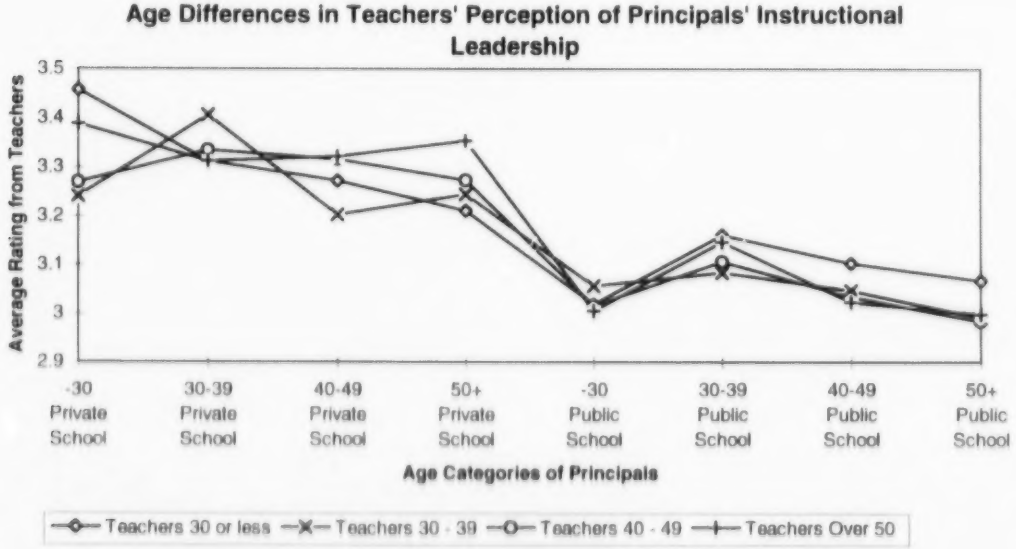

Figure Three

Table Eleven
Definitions of Independent Variables

Variable Name	Definitions
Gender	Two groups: Male, Female.
Race	Three groups: Black (non-Hispanic), White (non-Hispanic), Other minorities (including, Native Americans, Asian and Pacific Islander Americans, Hispanic and other minorities not included by the first two categories).
Age	Originally in interval scale. When used in categorical format, there are four groups: Less than 30 years old, 30-39 years old, 40-49 years old, and 50 plus years old.
Highest degree earned	Three groups: Bachelor's or less, Master's, and Beyond Master's degree.
Degree in Edu. Adm.	Dummy: whether principal has a degree in Education Administration: yes/no.
In-Service training	Dummy: whether principal had in-service training in supervision or evaluation: yes/no.
Management training	Dummy: whether principal had additional training in management techniques: yes/no.
Principal internship	Dummy: whether principal had participated in a principal internship: yes/no.
Teaching experience	Originally in interval scale. When used in categorical format, there are five groups: less than 3 years of teaching experience, 3-6 years, 7-10 years, 11-15 years, and over 15 years.
Administrative experience	Originally in interval scale. When used in categorical format, there are five groups: less than 3 years of experience as school principals, 3-6 years, 7-10 years, 11-15 years, and over 15 years.
Experience as department head	Dummy: whether principal had been a department head before: yes/no.
Experience as assistant principal	Dummy: whether princpal had been an assistant principal before: yes/no.
Experience as guidance counselor	Dummy: whether principal had been a guidance counselor before: yes/no.
Experience as athletic coach	Dummy: whether principal had been an athletic coach before: yes/no.
Region	Four groups based on Census coding: Northeast, North-central, South, and West.
Size	Enrollment size of school at the time the survey was conducted. Interval scale.
Level	Three groups: elementary, secondary, elementary and secondary combined and others.
Urbanicity	Three groups: large and mid-size central cities, suburbas of large and mid-size central cities, and rural areas/small towns and others.
% of miniority enrollment	Originally in interval scale. When used in categorical format, there are six groups: less than 5% minority enrollment in school, 5% - 14%, 15% - 24%, 25% - 34%, 35% - 49%, 50% or over.
% of minority teachers	Originally in interval scale. When used in categorical format, there are four groups: less than 5% minority teachers in school, 5%-14%, 15% - 24%, 25% or over.
% of students eligible for free or reduced-price school lunch	Created vairiable (number of eligible students divided by total enrollment). Orginally in interval scale. When used in categorical format, there are five groups: less than 5% of students are eligible for free or reduced-price school lunch, 5% - 20%, 21% - 34%, 35% - 49%, 50% or over.
Availability of ESL for LEP students	Dummy: whether school has a special English as Second Language (ESL) program for students with limited English proficiency (LEP).